

Comparison of L-band and C-band InSAR for the Surface displacement Measurement, and Analysis plan for ALOS L-band InSAR at GSI

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The synthetic aperture radar interferometry (InSAR) has become a powerful tool to detect spatial surface displacement of the ground. The Geographical Survey Institute (GSI) has been developing software 'GSISAR' which analyses JERS-1 InSAR data. After the end of JERS-1 operation, GSI uses ENVISAT and RADARSAT data. ENVISAT and RADARSAT have C-band (5.6-cm wave length) radar and JERS-1 had L-band (23.5-cm) radar. L-band radar wave can penetrate leaves and grasses and measure the ground movement directly, however, C-band radar has difficulty in penetrating leaves and grasses. Therefore, L-band radar has much better coherency in heavy vegetated area like Japan.

We compare the L-band InSAR and C-band InSAR in several regions in Japan, Fukuoka, Sendai and Kirishima volcano.

The Japan Aerospace Exploration Agency (JAXA) launched the Advanced Land Observing Satellite (ALOS) 'Daichi', 'The Ground' in Japanese, in 24 January 2006. ALOS has an L-band SAR sensor, which has better coherency (higher signal to noise ratio) than C-band. GSI has been preparing to handle ALOS raw data and produce displacement map of Japan Islands using InSAR. We will briefly introduce the analysis plan for ALOS InSAR.